State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-1-135
Relating to Certification of New Off-Road Compression-Ignition Equipment Engines

CATERPILLAR, INC.

Pursuant to the authority vested in the Air Resources Board (Board) by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-9;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engine and exhaust emission control system produced by the manufacturer are certified as described below for use in off-road equipment:

Model Year: 2001

Typical Equipment Usage: Pump, Generator and Other Industrial Equipment

Fuel Type: Diesel

Engine Family	Engine Displacement (liters)	Useful Life (hours)	Exhaust Emission Control Systems and Special Features
1CPXL58.6ERK	51.8 and 58.6	8000	Direct Diesel Injection Turbocharger Engine Control Module Charge Air Cooler

Engine models and codes are listed on attachments. Production engines shall be in all material respects the same as those for which certification is granted.

The exhaust emission certification standards and certification values for hydrocarbons (HC), carbon monoxide (CO), oxides of nitrogen (NOx), and particulate matter (PM) (units are expressed in grams per kilowatt-hour (g/kw-hr)), and the opacity-of-smoke certification standards and certification values in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family are as follows (Title 13, California Code of Regulations, Section 2423, as amended by Board approval on January 28, 2000):

Engine Power Rating (kw)	Emission Standard Category		Exhaust Emissions (g/kw-hr)				Smoke Opacity (%)		
			HC	CO	NOx	PM	Accel	Lug	Peak
560<KW	Tier 1	Standard	1.3	11.4	9.2	0.54	20	15	50
		Certification	0.4	1.7	8.4	0.45	18	4	23

BE IT FURTHER RESOLVED: That, at the request of the manufacturer, the listed engine models are **conditionally certified** to, and shall be required to comply with, all amendments to Title 13, California Code of Regulations, Sections 2420 through 2427 adopted by the Board on January 28, 2000 at its hearing "TO CONSIDER AMENDMENTS TO OFF-ROAD COMPRESSION-IGNITION ENGINE REGULATIONS: 2000 AND LATER EMISSION STANDARDS, COMPLIANCE REQUIREMENTS AND TEST PROCEDURES." The listed engine models comply with all such amendments, including, but not limited to:

- the amended "Emission Control Labels—1996 and Later Off-Road Compression-Ignition Engines" (Title 13, California Code of Regulations, Section 2424) for the aforementioned model year;
- the Board's amended emission control system warranty provisions (Title 13, California Code of Regulations, Sections 2425 and 2426) for the listed engine models, as demonstrated by materials submitted by the manufacturer; and
- new California requirements for the Selective Enforcement Audit (SEA) for the listed engine models, as demonstrated by the manufacturer's submission of materials.

BE IT FURTHER RESOLVED: That the conditional certification described in the paragraph above is conditioned on the amendments being approved by the California Office of Administrative Law (OAL) pursuant to Government Code Section 11349.3, and where necessary, authorized by the Administrator of the U. S. Environmental Protection Agency (U.S. EPA) pursuant to Section 209(e)(2) of the Federal Clean Air Act. In the event that the OAL disapproves the amendments or the U.S. EPA decides not to authorize them, the ARB shall notify the manufacturer that the listed engine models must comply with the "California Exhaust Emission Standards and Test Procedures for 1996 and Later Heavy-Duty Off-Road Diesel Cycle Engines" (Title 13, California Code of Regulations, Sections 2420 through 2427) adopted on May 12, 1993, as applicable. Failure to demonstrate compliance within 45 days after notification by the Air Resources Board shall be cause for the Board to revoke the Executive Order and deem the listed engine models uncertified.

The conditional certification described herein is not conditioned on further U.S. EPA action on amendments determined by the Board to be within the scope of an existing U.S. EPA authorization.

Engines certified under this Executive Order must conform to the above requirements under Title 13, California Code of Regulations, Chapter 9, Article 4, and all other applicable California emission laws and regulations

Executed at El Monte, California this 21st day of December 2000.

R. B. Summerfield, Chief
Mobile Source Operations Division

ATTACHMENT

Engine Model Summary Form

U-R-1-135

Manufacturer: **Caterpillar Inc.**

Engine category: **Nonroad CI**

EPA Engine Family: **1CPXL58.6ERK**

Mfr Family Name:

Process Code: **New Submission**

1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
1	3512	2250@1900	604	772	6329@1400	605	571	EM,DI,TC,ECM
2	3512	1450@1750	421	496	5187@1300	494	432	EM,DI,TC,ECM
3	3512	1700@1750	487	573	6077@1300	561	491	EM,DI,TC,ECM
4	3512	1303@1200	550	444	5700@1200	N/A	N/A	EM,DI,TC,ECM
5	3512	1478@1200	631	510	6463@1200	N/A	N/A	EM,DI,TC,ECM
6	3512	1621@1200	704	569	7090@1200	N/A	N/A	EM,DI,TC,ECM
7	3512	1784@1800	514	622	5200@1800	N/A	N/A	EM,DI,TC,ECM
8	3512	1971@1800	559	678	5747@1800	N/A	N/A	EM,DI,TC,ECM
9	3512	2172@1800	610	739	6334@1800	N/A	N/A	EM,DI,TC,ECM
10	3512	1492@1800	433	525	4349@1800	N/A	N/A	EM,DI,TC,ECM
11	3512	1644@1800	476	576	4793@1800	N/A	N/A	EM,DI,TC,ECM
12	3512	1810@1800	521	631	5278@1800	N/A	N/A	EM,DI,TC,ECM
13	3512	1847@1800	530	642	5384@1800	N/A	N/A	EM,DI,TC,ECM
14	3512	2028@1800	573	694	5912@1800	N/A	N/A	EM,DI,TC,ECM
15	3512	1478@1200	617	498	6463@1200	N/A	N/A	EM,DI,TC,ECM
16	3512	1910@1800	530	642	5568@1800	N/A	N/A	EM,DI,TC,ECM
17	3512	2001@1900	540	690	5623@1400	547	515	EM,DI,TC,ECM
18	3512	1476@1200	625	505	6457@1200	N/A	N/A	EM,DI,TC,ECM
19	3512	1509@1800	424	514	4399@1800	N/A	N/A	EM,DI,TC,ECM
20	3512	1476@1200	625	505	6457@1800	N/A	N/A	EM,DI,TC,ECM
21	3512	1500@1800	425	515	4821@1800	471	428	EM,DI,TC,ECM
22	3512	1575@1800	445	539	4821@1800	471	428	EM,DI,TC,ECM
23	3512	1650@1800	464	562	4821@1800	471	428	EM,DI,TC,ECM

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